Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-51.   Cancelled

52.   (Currently Amended)   [A] <u>In a</u> video hyperlinked annotation data system, a computer-readable medium [~~including a plurality of data structure elements~~] comprising:
a first annotation data structure element including an object reference for an object in a video frame and a corresponding first identifier; and
a second annotation data structure element [~~referenced~~] <u>identified</u> by said first identifier, said second annotation data structure element including a first set of annotation data references.

53.   (Previously Presented)   The system of claim 52 further comprising at least one timing data indicator associated with at least one of said plurality of data structure elements.

54.   (Previously Presented)   The system of claim 53 wherein said timing data indicator indicates an expiration time.

55.   (Previously Presented)   The system of claim 53 wherein said timing data indicator indicates an activation time.

56. (Currently Amended) The system of claim [1] 52 wherein said first annotation data structure element is associated with a set of video frames of a video program and wherein said second annotation data structure element is associated with said video program.

57. (Previously Presented) The system of claim 52 wherein said first data structure element and said second data structure element are transmitted separately.

58. (Previously Presented) The system of claim 52 wherein said first set of annotation data references includes an annotation data field and a second identifier referencing a third annotation data structure element.

59. (Previously Presented) The system according to claim 58 wherein said annotation data field is a title data field and said third annotation data structure element is a string including a title of said object.

60. (Previously Presented) The system according to claim 58 wherein said third annotation data structure element includes at least one display identifier for referencing a fourth data structure element to be displayed to a viewer and at least one action identifier referencing a fifth data structure element providing instructions so said system for action to be taken by said system.

-3-

61. (Previously Presented)   The system according to claim 58 wherein said annotation data field is a variable parameter field.

62. (Previously Presented)   The system according to claim 58 wherein said second identifier is a variable value.

63. (Currently Amended)   The system according to claim [52] 58 wherein said first and second identifiers are never duplicated by the system.

64. (Previously Presented)   The system according to claim 52 further comprising a fifth data structure element including location and shape information about said object.

65. (Currently Amended)   The system according to claim 64[.] , wherein said fifth data structure element is associated with a video frame.

66. (Currently Amended)   A method [of] for generating one or more data structures via a first processor in a hyperlinked video signal annotation data system, [including a plurality of data structure elements] the one or more data structures being stored in a computer-readable medium for access by an application program executed by a second processor in the hyperlinked video signal annotation data system, the method comprising:

creating a first annotation data structure element including an object reference for an object in a video frame and a corresponding first identifier; and

creating a second annotation data structure element [referenced] identified by said first identifier, said second annotation data structure element including a first set of annotation data references.

67. (Previously Presented) The method of claim 66 further comprising creating at least one timing data indicator associated with at least one of said plurality of data structure elements.

68. (Previously Presented) The method of claim 67 wherein said timing data indicator indicates an expiration time.

69. (Previously Presented) The method of claim 67 wherein said timing data indicator indicates an activation time.

70. (Previously Presented) The method of claim 66 wherein said first annotation data structure element is associated with a set of video frames of a video program and wherein said second annotation data structure element is associated with said video program.

71. (Previously Presented) The method of claim 66 wherein said first data structure element and said second data structure element are transmitted separately.

-5-

72. (Previously Presented) The method of claim 66 wherein said first set of annotation data references includes an annotation data field and a second identifier referencing a third annotation data structure element.

73. (Previously Presented) The method according to claim 72 wherein said annotation data field is a title data field and said third annotation data structure element is a string including a title of said object.

74. (Previously Presented) The method according to claim 72 wherein said third annotation data structure element includes at least one display identifier for referencing a fourth data structure element to be displayed to a viewer and at least one action identifier referencing a fifth data structure element providing instructions to said system for actions to be taken by said system.

75. (Previously Presented) The system according to claim 72 wherein said annotation data field is a variable parameter field.

76. (Previously Presented) The method according to claim 72 wherein said second identifier is a variable value.

77. (Currently Amended) The system according to claim [66] 72 wherein said first and second identifiers are never duplicated by the system.

78. (Currently Amended) The system according to claim 66 further comprising:

creating a fifth data structure element including location and shape information about said object.

79. (Currently Amended) The system according to claim 78[-], wherein said fifth data structure element is associated with a video frame.

80. (NEW) The computer-readable medium of claim 52 further comprising a third data structure storing image overlay data, the object being visually identified based on the stored image overlay data in response to a user command.

81. (NEW) The computer-readable medium of claim 80, wherein the image overlay data is associated with first timing data, presentation of the image overlay being synchronized with the video frame based on the first timing data.

82. (NEW) The computer-readable medium of claim 81, wherein a computer program code compares the first timing data with second timing data associated with a current video frame and sleeps for a period of time equivalent to a difference in times indicated by the first and second timing data, the

computer program code being awakened for visually identifying the object based on the image overlay data in response to an expiration of the time period.

83. (NEW)   The computer-readable medium of claim 81, wherein at least one of the data structures is associated with second timing data, the second timing data being indicative of a last instance the data structure is used in a video program associated with the video frame, wherein the data structure is removed from the computer-readable medium in response to a determination based on the second timing data that the data structure is no longer used in the video program.

84. (NEW)   The computer-readable medium of claim 83, wherein the image overlay data and the first and second data structure elements are encoded into a packet stream received by a receiver in the video hyperlinked annotation data system.

85. (NEW)   The computer-readable medium of claim 84, wherein the image overlay data and the first and second data structure elements are encoded into a portion of the packet stream that is received prior to receipt of a portion of a video signal including the video frame.

86. (NEW)   The computer-readable medium of claim 85, wherein a fixed number of packets is allocated to each of a plurality of image overlay data sets to be encoded into the packet stream, the fixed number of packets corresponding to a

number of packets filled by a largest image overlay data set to
be encoded.

87. (NEW)   The computer-readable medium of claim 86,
wherein a particular image overlay data set fills a particular
number of packets that is less than the fixed number of packets.

88. (NEW)   The computer-readable medium of claim 87,
wherein the first and second data structure elements are encoded
into the packet stream by identifying a first occurrence of the
object associated with the first and second data structure
elements, and moving backwards in time from the first identified
occurrence and filling one or more unused packets allocated to
the particular image overlay data set with at least a portion of
the first or second data structure element.

89. (NEW)   The computer-readable medium of claim 88,
wherein the second annotation data structure element stores an
indication as to whether the object is associated with a video
stream and a fourth identifier to a fourth data structure
storing information for a particular video stream associated
with the object, wherein a user selects the object in response
to the object being visually identified and in response to the
selection, a determination is made as to whether the object is
associated with a video stream, and in response to the
determination, an identifier of a current data structure storing
information for a current video stream is replaced with the
fourth identifier, wherein information for the particular video

stream is retrieved from the fourth data structure based on the fourth identifier.

90.   (NEW)   The computer-readable medium of claim 88, wherein the packet stream is received with a video stream over a broadcast signal.

91.   (NEW)   The computer-readable medium of claim 88, wherein the packet stream is received out-of-band separately from a video stream including the video frame.

92.   (NEW)   The computer-readable medium of claim 88, wherein the object is visually identified via a computer usable program code, the program code containing executable instructions that, when executed, cause the computer to perform the steps of:

identifying on a first two-dimensional section containing a three-dimensional volume, a first region associated with the object, the first region including one or more first pixels;

filling the first region including the one or more first pixels with a predetermined value;

moving in a first direction along a third dimension to a second two-dimensional section containing the three-dimensional volume;

determining whether a second pixel in the second two-dimensional section that corresponds to a filled pixel in the first two-dimensional section belongs to the three-dimensional volume;

filling a second region including the second pixel in the second two-dimensional section with the predetermined value;

returning to the first two-dimensional section; and

moving in a second direction along the third dimension to a third two-dimensional section containing the three-dimensional volume for filling a third region.

93. (NEW) The computer-readable medium of claim 92, wherein each two-dimensional section is a video frame.

94. (NEW) The computer-readable medium of claim 92, wherein the third dimension is time.

95. (NEW) A method for generating one or more data structures via a first processor in a video hyperlinked video signal annotation data system, the one or more data structures being stored in a computer-readable medium for access by an application program executed by a second processor in the hyperlinked video signal annotation data system, the method comprising:

identifying a region of a video frame associated with an object included in the video frame;

selecting a value for the identified region;

creating a first data structure mapping the selected value to a plurality of pixels in the identified region, the first data structure further storing a first reference pointer;

creating a second data structure identified by the first reference pointer, the second data structure associating the value to a first identifier; and

creating a third data structure identified by the first identifier, the third data structure including a first set of annotation data references for the object.

96.   (NEW)   The method of claim 95, wherein the value is associated with image overlay data for visually identifying the object in response to a user command.

97.   (NEW)   The method of claim 96, wherein the first data structure is associated with first timing data, the method further comprising processing the first timing data and synchronizing presentation of the image overlay with the video frame based on the processed first timing data.

98.   (NEW)   The method of claim 97 further comprising:

comparing the first timing data with second timing data associated with a current video frame;

causing a computer program code to sleep for a period of time equivalent to a difference in times indicated by the first and second timing data; and

awakening the computer program code for visually identifying the object based on the image overlay data in response to an expiration of the time period.

-12-

99. (NEW) The method of claim 98, wherein at least one of the data structures is associated with second timing data, the second timing data being indicative of a last instance the data structure is used in a video program associated with the video frame, the method further comprising:

removing the data structure from the computer-readable medium in response to a determination based on the second timing data that the data structure is no longer used in the video program.

100. (NEW) The method of claim 96, wherein the image overlay data and the first and second data structure elements are encoded into a packet stream received by a receiver in the video hyperlinked annotation data system.

101. (NEW) The method of claim 100, wherein the image overlay data and the first and second data structure elements are encoded into a portion of the packet stream that is received prior to receipt of a portion of a video signal including the video frame.

102. (NEW) The method of claim 101, wherein a fixed number of packets is allocated to each of a plurality of image overlay data sets to be encoded into the packet stream, the fixed number of packets corresponding to a number of packets filled by a largest image overlay data set to be encoded.

103. (NEW)   The method of claim 102, wherein a particular image overlay data set fills a particular number of packets that is less than the fixed number of packets.

104. (NEW)   The computer-readable medium of claim 103, wherein the first and second data structure elements are encoded into the packet stream by identifying a first occurrence of the object associated with the first and second data structure elements, and moving backwards in time from the first identified occurrence and filling one or more unused packets allocated to the particular image overlay data set with at least a portion of the first or second data structure element.

105. (NEW)   The method of claim 104, wherein the second annotation data structure element stores an indication as to whether the object is associated with a video stream and a fourth identifier to a fourth data structure storing information for a particular video stream associated with the object, wherein a user selects the object in response to the object being visually identified and in response to the selection, a determination is made as to whether the object is associated with a video stream, and in response to the determination, an identifier of a current data structure storing information for a current video stream is replaced with the fourth identifier, wherein information for the particular video stream is retrieved from the fourth data structure based on the fourth identifier.

106. (NEW)   The method of claim 104, wherein the packet stream is received with a video stream over a broadcast signal.

107. (NEW)   The method of claim 104, wherein the packet stream is received out-of-band separately from a video stream including the video frame.

108. (NEW)   The method of claim 104, wherein the object is visually identified via a computer usable program code, the program code containing executable instructions that, when executed, cause the computer to perform the steps of:

identifying on a first two-dimensional section containing a three-dimensional volume, a first region associated with the object, the first region including one or more first pixels;

filling the first region including the one or more first pixels with a predetermined value;

moving in a first direction along a third dimension to a second two-dimensional section containing the three-dimensional volume;

determining whether a second pixel in the second two-dimensional section that corresponds to a filled pixel in the first two-dimensional section belongs to the three-dimensional volume;

filling a second region including the second pixel in the second two-dimensional section with the predetermined value;

returning to the first two-dimensional section; and

moving in a second direction along the third dimension to a third two-dimensional section containing the three-dimensional volume for filling a third region.

109. (NEW)   The method of claim 108, wherein each two-dimensional section is a video frame.

110. (NEW)   The method of claim 108, wherein the third dimension is time.